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Preface: Proceedings of the 19th Topical Conference on
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Preface: Proceedings of the 19th Topical Conference on High-Temperature Plasma Diagnostics, Monterey, California, USA, 6–10 May 2012

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The 19th Topical Conference on High-Temperature Plasma Diagnostics was held in Monterey, California at the Hyatt Regency Monterey Convention Center from 6–10 May 2012. This conference has been held biannually for 36 years. As in the past, this meeting brought together physicists and engineers to discuss recent developments of diagnostic techniques and instrumentation for the study of high temperature plasmas in a variety of fields including magnetic confinement fusion, inertial confinement fusion, space plasmas, astrophysics, and industrial applications. The conference covers diagnostics for measuring electromagnetic emission, absorption and scattering over a spectrum from mm-wavelength radiation to gamma rays and diagnostics for measuring charged particles and neutrons from nuclear reactions. The conference also includes systems for magnetic, and charge particle probes and data acquisition and integration systems. Participants come from a diverse set of laboratories ranging from small university facilities to the major fusion facilities for burning plasmas like the National Ignition Facility (NIF) and the International Thermonuclear Experimental Reactor (ITER). With NIF now operational and ITER well into the design phase, the conference has a growing interest in diagnosing burning plasmas and developing diagnostics that operate in this stressing environment.

The trend of strong participation in this conference continued, with a total of 317 registered participants from 21 countries. The conference program included 26 invited talks and 304 contributed posters. This issue of Review of Scientific Instruments is dedicated to the conference proceedings and contains 247 manuscripts submitted for publication. These statistics demonstrate that the development of diagnostics for high-temperature plasmas continues to be an active area of research.

Contributions are required from many groups of people in order for a conference of this size to be successful. We thank the participants from this diverse community with a common interest in the challenge of diagnosing high temperature plasmas. The presentations, useful discussions, and published proceedings continue to make this conference a success. We thank the program committee for their efforts in putting together an excellent program of invited talks. We thank David Brower, John Rice, and Brent Stratton in particular for their help in organizing the magnetic confined plasma contributions to the program. We are grateful to the session chairmen for leading the invited talk sessions and for their efforts to find reviewers for the papers in their sessions. It is a special pleasure to thank the local

conference organization staff, Trina Voelker, Mila Shapovalov, and Maureen Lewis of Lawrence Livermore National Laboratory, for all their hard work. The conference would not have been a success without their dedication, organizational skills, and unfailing good humor. We would also like to thank Review of Scientific Instruments Editor Albert Macrander and Guest Editor Kenneth Young and Editorial Staff members for their hard work in ensuring the quality and timely publication of these proceedings.

We thank the National Ignition Facility of Lawrence Livermore National Laboratory and General Atomics for their support of the conference. We also thank the National Nuclear Security Administration of the Department of Energy and the Office of Fusion Energy Sciences of the Department of Energy for their endorsement of the conference.

The 2014 High Temperature Plasma Diagnostics Conference will be hosted by Oak Ridge National Laboratory. We look forward to an informative and enjoyable conference.

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